UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/729,058	12/04/2000	Anke Krasemann	GR 99 P 5363	6468

7590 01/30/2004

LERNER AND GREENBERG, P.A.
POST OFFICE BOX 2480
HOLLYWOOD, FL 33022-2480

EXAMINER	
MENZ, DOUGLAS M	

ART UNIT	PAPER NUMBER
2824	

DATE MAILED: 01/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicati n No.	Applicant(s)	
	09/729,058	KRASEMANN ET AL.	
	Examin r	Art Unit	
	Douglas M Menz	2824	

-- Th MAILING DATE of this communication appears on th cover sh et with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *1-4* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 December 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *10*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 5-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Summerfelt (US 5679980).

Regarding claim 5, Summerfelt discloses a capacitive electrode structure (Fig. 16), comprising:

A semiconductor substrate (30, Fig. 16 and TABLE - Col. 10);

A metal-oxide-layer (50) formed on said semiconductor substrate(30), said metal-oxide-layer containing molecules in the form of a metal-oxide-compound (Fig. 16 and TABLE – Cols. 12-13);

An oxidation inhibiting layer (34) on the metal-oxide-layer (Fig. 16 and Col. 4, lines: 15-19); and

An electrode (36) on the oxidation inhibiting layer (Fig. 16 and TABLE).

Regarding claim 6, Summerfelt further discloses wherein the oxidation inhibiting layer (34) is electrically conductive (Col. 3, lines: 28-40 and TABLE).

Regarding claim 7, Summerfelt further discloses wherein the electrode (36) is formed by a metal layer on the electrically conductive oxidation inhibiting layer (Fig. 16 and TABLE).

Regarding claim 8, Summerfelt further discloses wherein the electrically conductive oxidation inhibiting layer (34) is composed of tungsten nitride (TABLE – Cols. 10-11).

Regarding claim 9, Summerfelt further discloses wherein the electrically conductive oxidation inhibiting layer (34) is composed of titanium nitride (TABLE – Cols. 10-11).

Regarding claim 10, Summerfelt further discloses wherein the oxidation inhibiting layer (34) is not electrically conductive (TABLE – Cols. 10-11) and the electrode is formed by a polysilicon layer (Col. 3, lines: 18-19) on the oxidation inhibiting layer.

Regarding claim 11, Summerfelt further discloses wherein the electrically non-conductive oxidation inhibiting layer (34) is composed of a material having a high dielectric constant (TABLE).

Regarding claim 12, Summerfelt further discloses wherein the electrically non-conductive oxidation inhibiting layer (34) is composed of silicon nitride (TABLE).

Regarding claim 13, Summerfelt further discloses wherein the metal-oxide layer (50) is composed of an oxygen-rich material having a high dielectric constant (TABLE).

Regarding claim 14, Summerfelt further discloses wherein the metal oxide layer (50) is composed of titanium dioxide (TABLE).

Regarding claim 15, Summerfelt further discloses wherein the metal oxide layer (50) is composed of tantalum pentoxide (TABLE).

Regarding claim 16, Summerfelt further discloses wherein the metal oxide layer is composed of aluminum oxide (TABLE).

Regarding claim 17, Summerfelt further discloses further comprising a metal barrier layer between the metal oxide layer and the substrate (TABLE).

Regarding claim 18, Summerfelt further discloses wherein the metal barrier layer is composed of silicon dioxide (TABLE).

Regarding claim 19, Summerfelt further discloses wherein the metal barrier layer is composed of silicon nitride (TABLE).

Regarding claim 20, Summerfelt further discloses wherein the oxidation inhibiting layer comprises a nitrogen-rich compound for preventing a diffusion of oxygen atoms through the oxidation inhibiting layer (TABLE and Cols. 5-6).

Response to Arguments

Applicant's arguments with respect to claims 5-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US patent 5929475 discloses a capacitor with a similar diffusion barrier.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas M Menz whose telephone number is 571-272-1877. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on 571-272-1869. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2800.

DM

RICHARD ELMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800